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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,592	02/20/2004	Akio Atsuta	CFA00054US	1586

7590 07/27/2006

Canon U.S.A. Inc.  
Intellectual Property Department  
15975 Alton Parkway  
Irvine, CA 92618-3731

EXAMINER
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WYATT, KEVIN S

ART UNIT	PAPER NUMBER
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2878

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/783,592

Applicant(s)

ATSUTA ET AL.

Examiner

Kevin Wyatt

Art Unit

2878

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3 and 8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3 and 8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This Office Action is in response to the Request for Continued Examination and remarks filed on 07/20/2006. Currently, claims 3 and 8 are pending.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 3 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, lines 7-8, 10-11 and 12, the recited limitations, "the balance of light-emitting intensity between at least the at least two light portions respectively," "the balance of light-emitting intensity between the light portions," and "change of the balance" are unclear. The intended meaning of the term "balance of light-emitting intensity" is not clear. The claim should clarify in some manner whether this balance refers to either the generated intensity level between the light-emitters, the phase difference or the pulse frequency between the light-emitters.

In claim 8, lines 7-8, the recited limitation, "the balance of light-emitting intensity difference of the light portions" is unclear. The intended meaning of "balance of light-emitting intensity" is not clear. The claim should clarify in some manner whether this balance refers to either the generated intensity level between the light-emitters, the phase difference or the pulse frequency between the light-emitters.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Haas (U.S. Publication No. 20020000514 A1).

Regarding claim 3, insofar as understood, Haas shows in Fig. 1A an optical encoder comprising: a scale (2, i.e., grid scale) having an optical grating; a plurality of photoreceptor elements that are movable relatively with respect to the scale and that are disposed in relation to a pitch of the optical grating (when the grid disk (2) is stationary, laser diodes (11) and (12) emit pulses at the same intensity, however, when grid disk is in motion one of the laser diodes is shadowed by grid disk (2) thus altering the light emitting position of the laser diodes); a light source (1, i.e., emission device) having at least two light portions (11 and 12, i.e., laser diodes) which irradiate the photoreceptor elements (elements within photo receiver (3)) through the scale (2, i.e., grid plate) from at least two different directions; and a controller (combination of control device (7) and evaluation circuit (4)) which changes the balance of the light-emitting intensity between at least the two light portions respectively; wherein the controller (combination of control device (7) and evaluation circuit (4)) obtains relative-position information of the scale (2, i.e., grid scale) and the photoreceptor elements (paragraph

0027, lines 1-4, paragraph 8-11) based on the balance (phase difference between the two pulsed LEDs (11) and (12)) of light-emitting intensity between the light portions and on the signals obtained before and after the change of the balance.

Regarding claim 8, insofar as understood, Haas shows in Fig. 1A, an optical encoder comprising: a scale (2, i.e., grid scale) having an optical grating; a plurality of photoreceptor elements that are moveable with respect to the scale and that are disposed in relation to a pitch of the optical grating; a light source (1, i.e., emission device) having at least two light portions (11 and 12, i.e., laser diodes) which irradiate the photoreceptor elements (elements within photo receiver (3)) through the scale from at least two different directions; and a controller (combination of control device (7) and evaluation circuit (4)) which changes the light-emitting intensity of the light portions together; wherein the controller obtains relative-position information (paragraph 0027, lines 1-4, paragraph 8-11) of the scale (2, i.e., grid scale) and the photoreceptor elements (elements within photo receiver (3)) based on the balance (phase difference between the two pulsed LEDs (11) and (12)) of light-emitting intensity difference of the light portions and signals obtained before and after the change of the light-emitting intensity.

### ***Response to Arguments***

6. Applicant's arguments filed 07/20/2006 have been fully considered.

In response to applicant's arguments that Haas does not disclose or suggest changing the intensity of light sources together or the balance and computing an

Art Unit: 2878

amount of displacement of a scale and light emitters based on an output before and after the change, the examiner disagrees. Haas does in fact disclose changing the intensity of the light sources or the balance (insofar as understood). The disclosure for changing intensity is disclosed in paragraphs 0028, and 0031, lines 1-3, where the difference in intensities if the light sources (light emitters 11 and 12) may be determined in part by the difference in clock frequencies. The balance of light-emitting intensity (insofar as understood) of the two light sources may be determined by measuring the phase difference of the phase pulses of the light sources (light emitters 11 and 12) (paragraph 0028, lines 3-11). Therefore, claim 8 and the amendment to claim 3 are not sufficient to overcome the anticipation of Haas unless the 112 rejection of these claims can be addressed in a manner that overcomes this anticipation.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

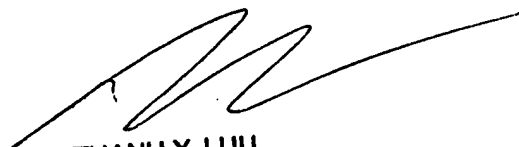
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2878

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



K.W.



THANH X. LUU  
PRIMARY EXAMINER